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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,056

03/22/2004

Laura L. Kiessling

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04/02/2009

GREENLEE WINNER AND SULLIVAN P C

4875 PEARL EAST CIRCLE

SUITE 200

BOULDER, CO 80301

EXAMINER

GROSS, CHRISTOPHER M

ART UNIT

PAPER NUMBER

1639

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/806,056	Applicant(s) KIESSLING ET AL.	
	Examiner CHRISTOPHER M. GROSS	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48,53,78,79,82-84,88-93,99-106,108,109,149-165 and 167-177 is/are pending in the application.
- 4a) Of the above claim(s) 82-84,92,104 and 105 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48,53,78,79,88-91,93,99-103,106,108,109,149-165, 167-177 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/19/2008</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner on the present case has changed. See contact information below. Responsive to communications entered 3/7/2008 and 12/19/2008.

Claims 48,53,78-79,82-84,88-93,99-106,108-109,149-165,167-177 are pending.

Claims 82-84,92,104-105 stand withdrawn.

Claims 48,53,78,79,88-91,93,99-103,106,108,109,149-165, 167-177 are under consideration.

Priority

This application, 10/806,056, filed 3/22/2004, claims benefit of 60/456,778, filed 3/21/2003, and states that it is a continuation-in-part of 09/815,296, filed 3/21/2001, which claims benefit of 60/191,014, filed 3/21/2000.

Withdrawn Objection(s) and/or Rejection(s)

The rejection of claims 1, 48, 53, 65, 67, 78, 79, 88, 93, 95, 99, 100, 108, 109, and 149-160, 166 and 167 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is hereby withdrawn in view of applicant's amendments to the claims.

The objection to the abstract for being too long (>150 words) is hereby withdrawn in view of applicants amendments thereto.

The objection to scheme 2 for lacking a SEQ ID is hereby withdrawn in view of applicant's amendments thereto.

The rejection of claims 1,65 and 95 under 35 U.S.C. § 102(b) as being anticipated by Whitesides et al., WO 98/46270 is hereby withdrawn in view of applicants cancellation of the claims.

The rejection of claims 1,65,67 and 95 under 35 U.S.C. 103(a) as being unpatentable over Whitesides et al., WO 98/46270 A2, and Brocchini et al., WO 01/18080 A1 is hereby withdrawn in view of applicants cancellation of the claims.

The rejection of claims 1,65,67, 95 and 166 under 35 U.S.C. 103(a) as being unpatentable over Whitesides et al., WO 98/46270 A2, and Brocchini et al., WO 01/18080 A1, and further in view of Taylor et al., WO 03/007971 A1 is hereby withdrawn in view of applicants cancellation of the claims.

The provisional rejection of claims 1, 48, 53, 65, 89-91, 95, 99, 101-103, 108, and 109 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17, 21-23, 28-30, 41-43, 59-61, 63-65, 68-74, 89-92, 140-148, 150, and 156-163 of copending Application No. 09/815,296 is hereby withdrawn in view of the abandonment of application 09/815,296.

Objection to the Specification

The amendment filed 3/7/2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Amended Abstract

(i) "Multivalent ligands" are broadened in lines 3, 14 and the last line by not being limited to the present invention.

(ii) "Scaffolds" is broadened in line 10 by no longer being defined as assemblies.

(iii) The chemical or biological species of line 9 is narrowed in being limited to antigens, epitopes, transmembrane receptors and cytoplasmic receptors. Previously the chemical or biological species were recited "without limitation."

(iv) "Carry" is broadened in lines 15 and 18 as to no longer mean display.

Amendment to Scheme 2

(v) The amendment to scheme 2 adds a covalent linkage between compound 21 and the polymer for which applicant has not pointed to support.

(vi) The amendment to scheme 2 changes: the N terminal Norleucine to Methionine in compound 21; adds "missing" NH groups to structure 21 as well as changes the name of compound 21 to fMLPGGK.

Applicant alleges support may be found on p 55 lines 12-14 on the present specification which states "Scheme 2 illustrates an exemplary N-formyl peptide 20 and an exemplary SRE for that N-formyl peptide 21 for use in multivalent ligands that modulate neutrophil migration." It is not clear from this passage how Methionine is indicated as the N terminal amino acid in compound 21; how the missing NH groups are provided and fMLPGGK is not mentioned.

Applicant also attempts to point to scheme 2 of parental application 09/815,296 [referred to as '296] for support. It is noted, however that scheme 2 of '296 does not

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show N terminal Methionine in compound 21, nor does it show a covalent bond to the polymer.

Applicant is required to cancel the new matter in the reply to this Office Action.

Maintained Claim Rejection(s) - 35 USC § 102

Claims 48, 53, 89-91, 99, 101-103, 106, 108, and 109 are rejected under 35 U.S.C. § 102(b) as being anticipated by Whitesides et al., WO 98/46270 A2 for the reasons set forth in the office action mailed 9/6/2007.

Response to Arguments

In the remarks entered 3/7/2008, applicant argues not all elements are taught.

Applicant's arguments have been fully considered but they are not deemed persuasive for the following reasons.

On p 19 of said remarks, applicant contends the polyvalent polymers according to Whitesides et al are taught as inhibiting the adhesion of ricin to erythrocytes rather than "enhancing" aggregation thereof, as set forth in claim 89.

In this regard applicant's attention is respectfully invited to table 10 of Whitesides et al concerning ricin-induced agglutination of erythrocytes. Here agglutination is taken as a type of aggregation and, as shown in the table, various polymeric galactosides are presented with regard to their propensity to generate agglutinated erythrocytes. For example PAA(Gal-beta; 1.0) "enhances" agglutination with the respect most potent polyvalent polymer, PAA(Gal-beta; 0.4). Whitesides et al also discuss cellular aggregation assays on p 99 lines 6-16.

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In the paragraph bridging pp 19-20 of the remarks, applicant argues that Whitesides et al do not teach the generation of assemblies wherein the number density or spacing of the recognition elements is controlled as set forth in claim 101.

In this regard, applicants attention is respectfully invited to p 4 lines 20-31 (with a specific example on p 126-128) where Whitesides et al disclose polyvalent presenters have formulas such as $Y-(X-A)_n$ where Y represents framework (e.g. a polymeric backbone such as polyacrylate) X is a linker (e.g. $CH_2CH=CH_2$); A is a functional group (e.g. galactoside). And, as discussed above, the various galactoside to polyacrylate (PAA) ratios (i.e. the number density or spacing of the recognition elements) lead to different levels of agglutination (e.g. PAA(Gal-beta; 1.0 vs. PAA(Gal-beta; 0.4)).

Maintained Claim Rejection(s) - 35 USC § 103

Claims 48, 53, 78, 79, 88-91, 93, 99-103, 106, 108, and 109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitesides et al., WO 98/46270 A2, and Brocchini et al., WO 01/18080 A1 for the reasons set forth in the office action mailed 9/6/2007.

Response to Arguments

Applicant argues, see remarks entered 3/7/3008, there is no expectation of success.

Applicant's arguments have been fully considered but they are not deemed persuasive for the following reasons.

Specifically in the paragraph bridging pp 22-23, applicant contends there is no teaching or suggestion in Brocchini et al that biological species will exhibit any biological activity when attached to a polymer generated by atom-transfer radical polymerization (ATRP), such as set forth in claim 100.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., biological species which remain attached to polymers) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, it is noted that both Brocchini et al and Whitesides et al both use PAA and Whitesides et al teach biological species attached thereto with biological activity.

Claims 149-165, 167-177 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitesides et al., WO 98/46270 A2, and Brocchini et al., WO 01/18080 A1, as applied to claims 48, 53, 78, 79, 88-91, 93, 99-103, 106, 108, and 109 above, and further in view of Taylor et al., WO 03/007971 A1 for the reasons set forth in the office action mailed 9/6/2007.

Response to Arguments

Applicant argues, see remarks entered 3/7/3008, not all elements are taught.

Applicant's arguments have been fully considered but they are not deemed persuasive for the following reasons.

Specifically in the first full paragraph on p 26 , applicant contends Taylor et al do not teach multivalent ligands having Ring-Opening Metathesis Polymerization (ROMP) or ATRP scaffolds or that said multivalent ligands will work for immune adherence.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, Whitesides et al provide multivalent complexes and Brocchini et al provide ATRP polymers.

With regard to immune adherence, applicant's attention is respectfully invited to p 1 line 32 of Taylor et al where it is explicitly discussed. Furthermore, Taylor et al teach in the abstract an antiCR1-antiFc complex may be used for immune clearance (i.e. immune adherence).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER M. GROSS whose telephone number is (571)272-4446. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571 272 0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher M Gross
Examiner
Art Unit 1639

cg

/JD Schultz/
Supervisory Patent Examiner, Art Unit 1635